General Specifications

FieldMate
Versatile Device Management Wizard

FieldMate™ R3.01

GS 01R01A01-01E

1. Features

FieldMate is used for the field device setting and adjustment, which must be connected for all activities.

Moreover off line database function for up to 500 devices which maintains a complete record for all device configuration and maintenance activities.

FieldMate is a PC based configuration tool that performs numerous tasks, including initial setup, daily maintenance, troubleshooting, and configuration backup for device replacement. These tasks are streamlined by FieldMate's intuitive operation and integrated environment, which is independent from communication protocols and device vendors.

FieldMate incorporates the open FDT/DTM standard and is compliant with DTMs per the FDT1.2 and FDT2.0 simultaneously standard. FieldMate supports by Built-in DTM interpreting the existing Device Description (DD) instaneously, for other vendor's devices that do not have DTMs available.

*FDT: (Field Device Tool) is a frame application that standardsizes the communication and configuration interface between all field devices and host systems.

*DTM: (Device Type Manager) is the application which defines the Graphical User Interface (GUI) specific to the device.

The FDT frame is an integral part of FieldMate. Many DTMs are included with the FieldMate application, and additional DTMs are available from most field device vendors.

2. Functional Details

FieldMate

| Segment Viewer |
| Device Viewer |
| DTM Works |
| Parameter Manager |
| DD Menu |
| History |
| 3rd Party Device DTM |
| Device Replacement Tool |
| Device Navigator |
| Device Maintence Info |
| User Management |
| 3rd Party COMM DTM |
| Serial Number Acquisition |
| AXF Verification |
| PRM Synchronization |
| FieldMate Validator |

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■ **Communication Function**
FieldMate supports the following communication protocols:

● **BRAIN**
● **FOUNDATION™ fieldbus H1**
● **HART (HART7 is supported)**
● **PROFIBUS**
● **ISA100.11a**
It conforms to ISA (International Society of Automation) 100.11a which has been progressed as the standards of Wireless system for Industrial Automation.
● **Modbus**

■ **Device Interface Function**
Segment Viewer: BRAIN, FOUNDATION fieldbus H1, HART, PROFIBUS, ISA100.11a*1, Modbus
Displays a list of devices currently connected on the communication lines, grouped by protocol.
Basic device specific information is displayed depending on protocol (Device ID, Manufacturer ID, address, Device type, Device revision, and status)
*1 It displays either via gateway or infrared communication.

AXF Verification Tool™

YOKOGAWA ◆

Device Viewer: FOUNDATION fieldbus H1, HART
Displays the current status of the field device, including errors, warnings and good status. The status display icon (red, yellow, green) clearly indicates the device's self-diagnostic status.

Device Navigator
Shows all registered devices.
Provide a searching function by tag, device name, memo, etc.
Online registration and offline registration can directly be implemented from Segment Viewer/Device Navigator. (Up to approx. 500 devices can be registered)
Marking it with flags to remind users of outstanding issues etc., simplifying daily maintenance.

■ Configuration Function
Device parameters can be easily configured.

● DTM Works: BRAIN, FOUNDATION fieldbus H1 HART, PROFIBUS, ISA100.11a, Modbus
The DTM Works provides not only configuration, but easy setup, calibration, simulation wizards etc. as defined by the device vendors' DTM.

● Parameter Manager: FOUNDATION fieldbus H1, HART
The Parameter Manager is a simple parameter viewing window, in which adjustment and field device replacement can easily be performed. Configuration files may be imported/exported from/to the device easily, and stored on the PC for future needs.

● DD Menu: FOUNDATION fieldbus H1
The existing fieldbus DD is utilized to enable function block configuration.

■ History Function
Logs of operations are automatically recorded.
1) Date & Time
2) Device Tag
3) Device ID
4) User
5) Source: DTM works, DD Menu, Parameter Manager, etc.
6) Category: Configuration (device parameter change) and System (logs of login, etc.).
7) Message: Details log of changes

■ 3rd Party DTM Function
This function provides device interface in compliance with FDT standard, enabling the features defined by the device vendor's DTM.

■ Field Diagnostic Function
In NAMUR recommendation NE107, alarms are standardized into four status signals (Failure, Function Check, Out of Specification and Maintenance Required), this allows for reliable operation, more efficient planning of maintenance and higher confidence in the instruments operation.
The classification, configuration and status of many device alarms that conform to NE107 can be easily checked, changed and monitored by Field Diagnostic Function.
Communication Protocol:
FOUNDATION fieldbus H1, PROFIBUS

● Device Replacement Tool
Applicable device: HART EJX and EJA series
: Modbus EJX910
Uploads the device parameters and converts them for use by the replacement device.
Applicable parameters: Tag, Long Tag, Descriptor, Message, LRV, URV, Unit, Press Damp, Xfer function, etc.

■ Database Function

● Device Maintenance Info.
Provides advanced maintenance information consisting of:
- Device Information
- Sticky Note
- Images
- History
- Parameter (All Parameters of Device, ZERO Adjustment Parameters of Device)
- Attachment (Memo, Document, Parameter Manager Data, DTM Data)
All information can be exported / imported.

■ User management
Provides simple security and activity logging by allowing users to be defined by a user name and password. The user ID is incorporated as part of the device maintenance history.

■ 3rd Party COMM DTM support
Provides advanced connections and communication networking enabling:

- Access PROFIBUS-PA/DP devices
- Access HART devices via PROFIBUS
- Access 3rd Party multiplexers.
User defined communication topology can be saved in FDT project.

● Serial Number Acquisition
Applicable device: HART EJX and EJA series
Acquires serial number of the device and updates it in the Device Maintenance Information. Also exports the following information to a file.
- Serial Number
- Device Tag
- Device ID
- Device Revision
- Model and Suffix Code

● AXF Verification Tool (/VF option)
Verifies flowmeters without having to disconnect from a process line. Standard verification and Enhanced verification are available. The Verification result can be printed and stored in the Device Maintenance Information.
Applicable device: HART Magnetic Flowmeter AXF series

Remarks : AM012 Magnetic Flow Converter, CA150 HANDY CAL (or equivalent device) and Insulation checker are required for Enhanced verification.

● PRM (Plant Resource Manager) Synchronization
Synchronizes information between FieldMate and PRM to make use of PRM as a master data base.
Bi-directional file transfer operation is supported.

● **FieldMate Validator (/VT option)**
This is an option for the N-IO nodes of Yokogawa CENTUM VP/ProSafe-RS.
Validation of connection between N-IO node and the field devices is possible by the FieldMate Validator without FCS (Field Control Station)/SCS (Safety Control Station). The N-IO node configuration and input/output validation are also possible without FCS/SCS. This option enables FieldMate to communicate with field devices via N-IO node. (The Device Replacement Tool cannot be used via N-IO node.)
* FieldMate Validator can be used only while the communication between FCS/SCS and the N-IO node is not established.

* The I/O configuration data can be exported/imported between FieldMate Validator and CENTUM VP/ProSafe-RS. For that, Microsoft Excel (Excel 2010 32bit/64bit SP2 or later) is required to be installed in the FieldMate Validator PC. And the following software is required to be installed in CENTUM VP/ProSafe-RS system.
CENTUM VP:
- VP6E5000 Engineering Server Function
- VP6E5100 Standard Engineering Function
- VP6E5210 Module-based Engineering Package
ProSafe-RS:
- RS4E5000 Engineering Server Function
- RS4E5100 Safety System Engineering and Maintenance Function
- RS4E5210 I/O List Engineering Package

3. Connection Example (for reference)

Sample BRAIN or HART configuration, connecting a pressure transmitter.

[Required Components]

● **BRAIN or HART EJA Pressure Transmitter.**
● **24 V DC Power supply**
● **Load Resistor (250Ω ±10%)**
● **USB FieldMate Modem: BRAIN/HART**
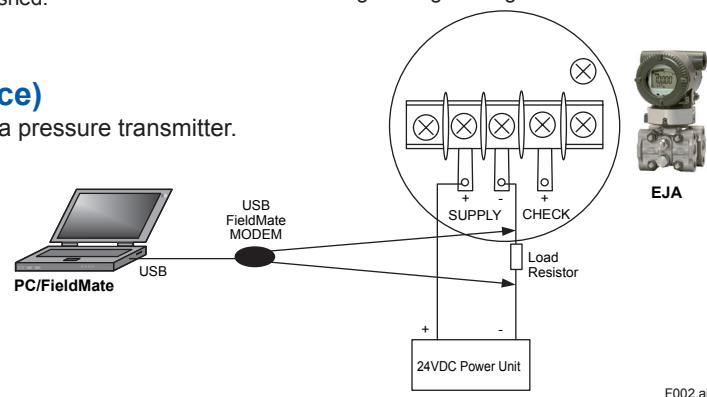
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4. System Requirements

Software Operating Environment	
OS	Windows 8.1 / 8.1 Pro 32bit/64bit Update or later
	Windows 7 Professional, Home Premium 32bit/64bit SP1 or later *7
OS Language	English, Japanese, Chinese(simplified), German, French, Russian *8

Hardware Operating Environment			
		Windows 8.1	**Windows 7**
PC		IBM PC/AT Compatible	
CPU		Intel ® Core™ i5-2520M or similar specification CPU	
Main Memory		2GB or more	
Hard Disk Drive		8GB or more	
DVD-ROM Drive		Windows 8.1 compatible	Windows 7 compatible
Display		1024×768 or better resolution recommended Windows 8.1 compatible	1024×768 or better resolution recommended Windows 7 compatible
Network port			
		Windows 8.1	**Windows 7**
BRAIN HART	Interface	One USB port USB2.0 standard	
	Modem	USB FieldMate Modem: BRAIN/HART(Yokogawa Option)	
FOUNDATION fieldbus H1 *1	Interface	One PCMCIA card slot	
	Interface board	PCMCIA-FBUS Series 2 (National Instruments)	
	Driver	NI-FBUS Communications Manager 5.0 or later	NI-FBUS Communications Manager 4.1.1 or later
FOUNDATION fieldbus H1 *1	Interface	One USB port USB2.0 standard	
	Interface board	NI USB 8486 (National Instruments)	
	Driver	NI-FBUS Communications Manager 5.0 or later	NI-FBUS Communications Manager 4.1.1 or later
FOUNDATION fieldbus H1 *1	Interface	One USB port USB2.0 standard	
	Interface hardware	FFusb (Softing)	
	Driver	V1.10.04.00 or later *2	V1.00.1.17 or later *2
PROFIBUS	Interface	One USB port USB2.0 standard	
	Interface card	PROFIusb (Softing)	
	COMM DTM & driver	PROFIdtm V2.11 or later Driver V5.46 or later	PROFIdtm V2.11 or later Driver V5.45 or later
	DP/PA coupler	KFD2-BR-A.PA.93 (PEPPERL+FUCHS) 6ES7 157-0AC80-0XA (SIEMENS)	
HART	Interface	Bluetooth 2.0	
	Modem	VIATOR ® Bluetooth ®Interface: Model 010041(MACTek ®) *3	
ISA100.11a *4	Interface	One USB port USB2.0 standard	
	Modem	Infrared Adapter :ACT-IR224UN-LN96-LE 9600bps (ACTiSYS) *5	
	Driver	Version 1.7.0 or later	Version 1.5.0 for Win 8 Only
ISA100.11a *6	Interface	One Ethernet port	
Modbus Serial	Interface	One USB port USB2.0 standard	
	Modem	Not supported	Isolated RS422/485 USB adaptor SP390A-R2 (BLACK BOX)
	Driver		Version 2.0.0 or later

Login	
Account	Administrator privilege

*1   Interface is selectable
*2   The package is provided complete with FieldMate driver from Softing
*3   Microsoft supplied Bluetooth stack is used
*4   ISA100.11a OOB infrared communication
*5   Holder for Infrared Adapter is available (recommended): Gorillamobile Original: GM1 (JOBY, Inc).
*6   ISA100.11a communication via gateway
*7   FieldMate Validator is supported with Windows 8.1 Pro 64bit and Windows 7 Professional 64bit.
*8   FieldMate Validator is supported with an English OS and a Japanese OS.

5. Model and Suffix Codes

Field device management software package: FieldMate Release: R3.01

MODEL, SUFFIX CODES

Model	Suffix Codes			Description	Remarks
FSA111	··			FieldMate	
License	**-S**··			Single PC license	License number issued
—	**1**·······························			Always 1	
Language		**1**···························		Always 1 *2	
Option Code			**/B**················	USB FieldMate Modem	BRAIN/HART
			/VF··············	AXF Verification Tool	
			/VT··············	FieldMate Validator *3	For N-IO Node

CD-ROM (FieldMate Software Media): F9197DS *1
DVD-ROM (Device Files Media): F9197DT *1
USB FieldMate Modem (BRAIN and HART protocols): F9197UC
    *1   Replacement disk only
    *2   With an English Windows OS, FieldMate English can be installed.
          With the following Windows OS, either FieldMate with the following language or FieldMate English can be installed.
               Japanese, Chinese (simplified), German, French, Russian
    *3   FieldMate Validator software (including user's manual) may be downloaded from Yokogawa web site.
          A display language of FieldMate Validator is English.
          A commercially available USB cable (Connector type of N-IO node : Micro-B) is necessary to connect to N-IO node.

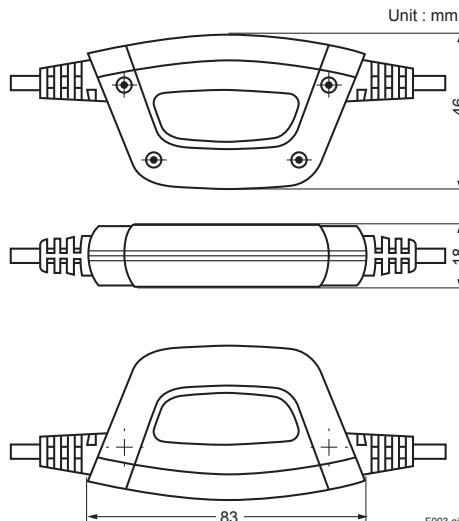# 6. External View

External view of USB FieldMate modem: BRAIN/HART

Unit : mm

Fig. 3: USB FieldMate Modem

Total cable length: Approximately 2.3m

Techinical Specifications	USB Interface
SOFTWARE	
USB Interface	USB2.0 standard *1
ELECTRICAL	
Power Supply	System powered by USB Port
Supply Current	40mA@ + 5 V
Pins to Computer	USB Type-A connector
Pins to Device	2-pin, polarity insensitive Mini-grabber test clips. Detachable alligator clips addtionally
Output Level (HART)	0.5 + / - 0.1 Vpp trapezoidal wave@1200/2200 Hz
Output Level (BRAIN)	1.0 + / - 0.1 Vpp trapezoidal wave@2400 Hz
Isolation(DC)	1910 VDC between instrument and computer
Isolation(AC)	1350 Vrms (50Hz)
ENVIRONMENTAL	
Operating Temperature	0 °C to 55 °C
Storage Temperature	-40 °C to 70 °C
Storage Humidity	0% to 95% relative humidity
PHYSICAL DIMENSIONS	
Enclosure	83 x 46 x 18 mm, ABS industrial enclosure
Device Interface Cable	190 cm, 2-conductor terminating with two mini grabber clips
USB Cable	27 cm cable terminating in a USB type A connector

    *1:   USB2.0 also covers USB1.1

EMC Conformity Standards CE , ⚠, ⓚ, EⱧⳐ
  - CE Mark
    EN61326-1 Class A, Table1 (Basic immunity test requirement)
  - KC Mark
    Registration No: KCC-REM-YHQ-EEN260

7. Included Items

FieldMate includes the following items:

* Software and User's Manual of FieldMate Validator are not included. Please download Software and User's Manual of FieldMate via Yokogawa web site.

<Product>
- CD-ROM: FieldMate Software Media
- DVD-ROM: Device Files Media
- USB FieldMate modem: BRAIN/HART w/ cables (optional)

<Documentation>
- License number sheet
- Getting Started

Please download User's Manual via Yokogawa web site
http://www.yokogawa.com/fld/doc/manual/fld-fieldmate-manual-01en.htm

8. Items Contained in Media

■ **Items contained in the Media of FieldMate R3.01:**

CD-ROM: FieldMate Media
- FieldMate Program
- USB modem driver

DVD-ROM: Device Files Media
- Device DTM for Yokogawa devices
  -BRAIN
  -FOUNDATION fieldbus H1
  -HART
  -PROFIBUS
  -ISA100.11a
  -Modbus
- Device DTM for the HART devices *1
- Built-in DTMs (DTM interprets DD and works right straight.)
  -FOUNDATION fieldbus H1
  -HART
  -ISA100.11a
- DD for the FOUNDATION fieldbus H1 devices *2
- DD for the HART devices *1

  *1:   Devices registered with HART Communication
          Foundation, some DTM or DD may not be included.
  *2:   Devices registered with Fieldbus FOUNDATION,
          some DD may not be included.
  Remarks:
          Yokogawa certifies the quality and operability only of DD
          and DTM which have been registered by Yokogawa.

9. Compatibility

Compatibility between FieldMate and Device Files is indicated on the web site at the following URL.
http://www.yokogawa.com/fld/fieldmate/fld-fieldmate-systemreq-01en.htm#combi

10. User Registration

FieldMate may be installed on a single PC using the license number provided. FieldMate may be used for up to 30 days without registration.

For permanent installation, user registration is required. After registration an Activation Key is provided to the user. User registration may be done on the FieldMate User Registration web site.
https://voc.yokogawa.co.jp/PMK/
The items required for user registration are the license number and Hard Disk serial number (Volume Serial Number) of the PC to which FieldMate is installed. Installation of FieldMate Validator requires activation of FieldMate.

11. Trademarks

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